

**FURTHER DETAILS REGARDING MAIN TOPICS OF
PROGRAMME NO. 01/2014 (Item No. 12)
RADIOGRAPHER GRADE II**

**INDIAN SYSTEMS OF MEDICINE
(CATEGORY NO. 416/2011)**

1. **General and Radiation Physics**

Units in radiography, magnetism and magnetic properties, electrical energy, joules, watts, electromagnetic induction, alternating currents, transformers, electrical measuring instruments, electronics, modern physics, atomic structure, radio activity, x-ray tubes, x-ray spectrum, bremsstrahlung and characteristics x-rays, units and measure of radiation, principles of radiation detection and measurement.

2. **Basic subjects**

General anatomy, anatomy of nervous system, circulatory system, respiratory system, skeletal system, GIT, genito urinary system & endocrine system, general physiology, physiology of cardio vascular system, respiratory system, GIT, endocrine system, renal system, nervous system reproductive system and muscle and nerve. Elementary pathology, pathology of CNS, MSK, head and neck, respiratory, endocrine, GIT, GUT, genital and hepatobiliary system.

3. **Physics of medical imaging and radio therapy (Radio Diagnosis)**

X-ray film processing, ray films, intensifying screen, unsharpness in radiographs, fluoroscopy, dental radiography units, x-ray equipments, DSA, mammography, CT, MRI, ultra sound, CR, DR and radiation protection.

Radiography including dark room techniques, and modern imaging techniques X-ray exposure factors, dark room techniques, radiography of skull, upper limb, lower limb, vertebral column, Para nasal sinuses. Special investigation techniques like barium meal, barium enema, HSG, IVU, RGP, AGP, MCU, bronchography, myelography, enteroclysis, angiography and contrast agents in medical imaging Ultrasound scan CT scan-spiral CT, multislice CT scanner, low dose CT, CT angiography, virtual colonoscopy MRI scan -1.5 tesla magnets, diffusion, perfusion imaging, spectroscopy, DSA, Mammography and recent advances.

Radio therapy

General principles, radio therapy sources, brachy therapy, radio therapy simulators, radiotherapy treatment, planning, normal tissue reaction to radiation, clinical radio therapy, nuclear medicine

Physics of radio therapy

Cobalt 60 teletherapy units, linear accelerator, calibration of therapy units, dosimetry parameters, treatment calculations, isotopes used, radiation safety in radio therapy and recent advances in radio therapy

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.